



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/773,990 | 02/06/2004 | Robert K. Barr | 52096 | 7094 |

7590 06/28/2005
EDWARDS & ANGELL, LLP
P.O. Box 55874
Boston, MA 02205

EXAMINER

LEE, SIN J

ART UNIT PAPER NUMBER

1752

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/773,990

Applicant(s)

BARR ET AL.

Examiner

Sin J. Lee

Art Unit

1752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/27, 2/28, 4/27/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

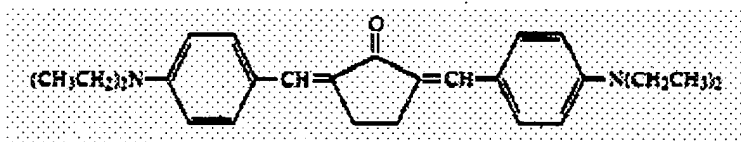
1. Upon reconsideration, previously indicated allowability of claim 7 is hereby withdrawn, and the following rejections are made non-final.

Claim Rejections - 35 USC § 102

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-6 and 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Kuchta (5,112,721) (with Matsumoto et al (US 6,869,746 B2) which is being cited here to support the Examiner's assertion that Kuchta's chain transfer agent (or hydrogen donor) is a reducing agent).

Kuchta teaches (col.4, lines 9-68, col.3, lines 1-56, col.7, lines 53-57) a photopolymerizable composition containing (1) at least one ethylenically unsaturated monomer; (2) at least one *polymeric binder*; (3) an initiator system which includes a hexaarylbisimidazole, a *chain transfer agent (or a hydrogen donor)*, and a sensitizer; (4) a co-sensitizer which specific example is shown in col.12 and also shown below;



Kuchta's chain transfer agent or hydrogen donor is presently claimed reducing agent as well, as evidenced by Matsumoto et al, col.11, lines 53-54 (Matsumoto states that a chain transport assisting agent of an active hydrogen donor is a reducing agent). The co-sensitizer shown above teaches present sensitizer of formula (I) of claim 1 and present cyclopentanone based conjugated photosensitizer of claim 4. Kuchta teaches

(col.9, lines 48-51) the amount of the co-sensitizer to be 0.01-0.2%. Therefore, the prior art teaches present range of 0.005wt%-10 wt% of claim 6; as stated in In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976), "the disclosure in the prior art of any value within a claimed range is an anticipation of that range." Also, since the prior art teaches present amount of claim 6, it is the Examiner's position that Kuchta's composition inherently contains sufficient amounts of the sensitizer to affect a color or shade change in the imaging composition upon application of energy at intensities of 5mW or less as presently recited in claim 1, 4, and 8. Kuchta applies his photopolymerizable composition onto a substrate and imagewise exposes the coated film to light sources such as neodymium:YAG laser, xenon, argon ion, and ionized neon laser, tunable dye lasers. Therefore, the prior art teaches present inventions of claims 1-6 and 8-10.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuchta (5,112,721) (with Kneafsey et al (US 6,835,789 B1) which is being cited here to support the Examiner's assertion that Kuchta's polymethyl methacrylate is a thickener).

Kuchta teaches that his composition contains *at least one* binder (see col.8, lines 25-48). As examples for his binder, Kuchta includes *polymethyl methacrylate* as well as

Art Unit: 1752

copolymers of methyl methacrylate, ethyl acrylate, allyl methacrylate, and *methacrylic acid*. It would have been obvious to one skilled in the art to use polymethyl methacrylate as well as copolymers of methyl methacrylate, ethyl acrylate, allyl methacrylate, and *methacrylic acid* as Kuchta's binders (since Kuchta teaches that his composition can contain more than one binder) with a reasonable expectation of obtaining a photopolymerizable composition with enhanced photospeed and image resolution. Kuchta's polymethyl methacrylate is a *thickener*, as evidenced by Kneafsey et al, col.8, lines 16-17. Also, Kuchta's methacrylic acid copolymer is a rheology modifier (present specification, pg.13 states that examples of rheology modifiers include acrylic polymers). Kuchta also teaches the use of a solvent (a liquid diluent) for his photopolymerizable composition (col.10, lines 12-15). Therefore, Kuchta's teaching renders obvious present inventions of claims 7, 11, and 12.

Response to Arguments

6. Applicants argue that Kuchta does not teach "one or more reducing agents". However, as discussed above in Paragraph 3, *Kuchta's chain transfer agent or hydrogen donor is presently claimed reducing agent as well*, as evidenced by Matsumoto et al, which states that a chain transport assisting agent of an active hydrogen donor is a reducing agent.

For this reason, present rejection still stands.

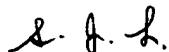
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sin J. Lee whose telephone number is 571-272-1333.

Art Unit: 1752

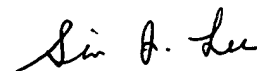
The examiner can normally be reached on Monday-Friday from 9:00 am EST to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



S. Lee
June 25, 2005



SIN LEE
PRIMARY EXAMINER